

The Claims Defining the Invention are as Follows

1. In an instant messaging system comprising: an IM server having a plurality of clients with IM client applications of the same or different types, a remote server to which at least one of the clients is connected, a computer network interconnecting the IM server and the remote server to provide IM communications therebetween, wherein the remote server utilises a sequential message handshaking protocol for transmitting and receiving messages to and from the IM server, whereby a confirmation of the successful transmission or receipt of a message is required to be received or sent by said remote server before a subsequent message is able to be transmitted or received, and wherein that portion of the computer network interfaced with the IM server is prone to latency and instability; the computer network including:

a buffer server interconnected with the remote server using a sequential message handshaking protocol corresponding to that used by the remote server, wherein the interconnection provides for the communication of messages between the buffer server and the remote server in steady, timed flows with minimal latency and connection disruptions;

said buffer server also being interconnected with the IM server using a protocol compatible therewith in a manner where message handshaking is not required to be performed sequentially and thus accommodate higher latency and instability problems with the computer network;

and wherein said buffer server is optimally connected relative to both the IM server and the remote server so as to maximise message throughput.

2. An instant messaging system comprising:-

an IM server having a plurality of clients with IM client applications of the same or different types;

a remote server to which at least one of said clients is connected;

a computer network interconnecting said IM server and said remote server to provide IM communications therebetween and wherein that portion of the computer network interfaced with the IM server is prone to latency and instability;

- 5 said remote server utilising a sequential message handshaking protocol for transmitting and receiving messages to and from the IM server, whereby a confirmation of the successful transmission or receipt of a message is required to be received or sent by said remote server before a subsequent message is able to be transmitted or received;
- 10 a buffer server interconnected with said remote server using a sequential message handshaking protocol corresponding to that used by said remote server, the interconnection providing for the communication of messages between said buffer server and said remote server in steady, timed flows with minimal latency and connection disruptions;
- 15 said buffer server also being interconnected with the IM server using a protocol compatible therewith in a manner where message handshaking is not required to be performed sequentially to accommodate higher latency and instability of the computer network therebetween; and
- 20 3. said buffer server being optimally connected relative to both said IM server and said remote server so as to maximise message throughput. The invention as claimed in claim 1 or 2, wherein the buffer server is connected via a direct electronic link to the remote server so as to ensure the communication of messages between the buffer server and the remote server in steady, timed flows with minimal latency and connection disruptions.
- 25 4. The invention as claimed in claim 1 or 2, wherein if the remote network is located in a highly reliable internet exchange with a highly reliable internet infrastructure, the buffer server is located in close proximity to the remote server and is connected via the highly reliable internet exchange and infrastructure to the remote server.

5. The invention as claimed in any one of the preceding claims, wherein said remote server is an SMSC server of a GSM network and said client types connected to the SMSC server have SMS capability that is controlled and managed by said SMSC server to provide for SMS there between and IM
5 between the SMSC server and the IM server.

6. The invention as claimed in any one of the preceding claims, wherein said sequential message handshaking protocol is CIMD2.

7. The invention as claimed in any one of the preceding claims, wherein said computer network interconnecting said IM server and said buffer server is the
10 internet.

8. The invention as claimed in claim 7, wherein the IM server is located within a tier 1 internet exchange.

9. The invention as claimed in any one of the preceding claims, wherein the IM server is interconnected to a plurality of remote servers via the computer
15 network, each remote server utilising a sequential message handshaking protocol for transmitting and receiving messages with the IM server, whereby a said buffer server is associated with and dedicated to each remote server.

10. The invention as claimed in any one of the preceding claims, wherein the messages are communicated in streaming data between said buffer server
20 and the remote server in well-defined time increments or cycles or sporadically depending on when the messages become available to send.

11. The invention as claimed in any one of the preceding claims, wherein the buffer server has sufficient memory to buffer up to 255 instant messages received from the remote server to accommodate latency and instability
25 problems associated with the computer network connection to the IM server.

12. The invention as claimed in any one of the preceding claims, wherein the buffer server has sufficient memory to buffer up to 255 instant messages received from the communication buffer to accommodate different communication speeds between the buffer server and the remote server.

13. The invention as claimed in any one of the preceding claims, wherein the IM server is provided with a communication buffer mirrored to the buffer of said buffer server of the remote network, and each buffer comprises a circular array to contain the messages currently being processed by the instant messaging system at any one time, and wherein a plurality of statuses are recorded against each message to indicate its particular stage of communication between the IM server and the SMSC server.
14. The invention as claimed in any one of the preceding claims, wherein the IM server is provided with a communication buffer mirrored to the buffer of said buffer server of the remote network, and each said buffer is provided with synchronization means to reconstruct messages that may have been lost in transit between the buffers as a result of an extended interruption to the computer network linking the same.
15. The invention as claimed in claim 14 as dependent on claim 13, wherein said synchronization means reconstructs messages from said circular array having regard to the statuses of the current messages being processed by the instant messaging system.
16. An instant messaging system substantially as herein described with reference to the accompanying drawings as appropriate.
17. A method for instant messaging between a plurality of clients connected to a centralised IM server, one client having an IM application provided via a remote network connected to the IM server via a computer network and a remote server, and the remote server utilising a sequential message handshaking protocol for transmitting and receiving messages to and from the IM server, whereby a confirmation of the successful transmission or receipt of a message is required to be received or sent by said remote server before a subsequent message is able to be transmitted or received and wherein that portion of the computer network interfaced with the IM server is prone to latency and instability; the method comprising:-

buffering communications with that portion of the computer network interfaced with the remote server and using a sequential handshaking protocol corresponding to that used by the remote server, so that the communication of messages with the remote server is provided in steady, timed flows with minimal latency and connection disruptions;

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simultaneously buffering communications with that portion of the computer network interfaced with the IM server using a communication protocol compatible therewith in a manner where message handshaking is not required to be performed sequentially thereby accommodating higher latency and instability that may be associated with that portion of the computer network; and

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performing the buffering in a manner so as to maximise message throughput.

18. A method as claimed in claim 17, wherein the buffering is performed via a direct electronic link to the remote server so as to ensure the communication of messages between the buffer server and the remote server in steady, timed flows with minimal latency and connection disruptions.

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19. A method as claimed in claim 17, wherein if the remote network is located in a highly reliable internet exchange with a highly reliable internet infrastructure, the buffering may be performed in close proximity to the remote server and via the highly reliable internet exchange and infrastructure to the remote server.

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20. A method for instant messaging between a plurality of clients having IM applications of the same or different types substantially as herein described with reference to the accompanying drawings as appropriate.